

SECTION 6: BLADDER PAIN SYNDROME-REVIEW

The pain of painful bladder

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Abstract

Bladder pain can have a number of different etiologies. This brief summary provides an overview of bladder pain syndrome, including current evidence-based recommendations for diagnosis and management.

Bladder pain syndrome (BPS) can be described as pain, pressure or discomfort on bladder filling, accompanied by at least one other urinary symptom (e.g., persistent urge to void, urinary frequency).¹ This summary reviews the evidence-based diagnosis and work-up of BPS, and provides an overview of the most recent treatment recommendations, as published by the American Urological Association (AUA) in 2011.²

Diagnosis and workup

There are a number of conditions that can cause pain in the lower urinary tract. The diagnosis of BPS is made on the basis of exclusion of these confusable diseases, in combination with the confirmation of signs and symptoms of BPS.

The European Society for the Study of Interstitial Cystitis (ESSIC) provides an exhaustive list of the differential diagnosis for BPS in its 2008 recommendations.¹ While it is not necessary to perform all of the tests listed in that document for each patient, it is informative to review this document and keep these other conditions in mind when the diagnosis of BPS is suspected.

The 2011 AUA Guidelines provide an algorithm for the work-up and diagnosis of BPS (Fig. 1). The initial basic assessment includes history, physical examination, urinalysis and culture, frequency and volume chart, post-void residual, symptom questionnaire and pain evaluation. For those with a history of smoking, cytology is also recommended. For many patients, this evaluation will be adequate to initiate therapy. When the basic assessment suggests complicated BPS (e.g., with significant incontinence, emptying difficulties or other comorbidities), the guidelines suggest considering additional testing (e.g., imaging, cystoscopy, urodynamics)

or referral. It is essential to understand that ulcerative interstitial cystitis (Hunner's lesions) appears to be an entirely different condition than BPS without ulceration, occurring in a different patient population, and associated with different treatment regimen and prognosis. The patients are older, typically developing symptoms after menopause, and often present with sterile pyuria. A careful cystoscopic examination with biopsy of suspicious areas will lead to the diagnosis; the Hunner's lesions should be treated in their entirety by fulguration or resection and the outcome is almost always gratifying.

Management

The management of BPS consists of seven basic principles, which are reflected in the algorithm presented in Fig. 2:

1. Begin with more conservative therapies;
2. The initial type and level of therapy depends on symptoms, clinician judgment, and patient preference;
3. Ineffective therapy should be stopped once a clinically meaningful interval has elapsed;
4. Surgery is only a reasonable option for treatment of Hunner's lesions, end-stage bladders, or when conservative measures have been exhausted and the quality of life is poor;
5. Multiple, simultaneous treatments may be considered if it is in the best interest of the patient. Reassessment to document efficacy is essential;
6. Continuously assess pain management for effectiveness, consider multidisciplinary approach if necessary; and
7. Reconsider the diagnosis if there is no improvement after multiple treatment approaches.

Initial treatments applicable to all patients include education, self-care, stress management and pain management. Most patients will require additional therapy and oral medications, bladder instillations, and pelvic floor physical therapy—all considered second-line options. Recommended oral medications include amitriptyline, hydroxyzine and pentosanpolysulfate. Bladder instillations include dimethyl sulfoxide, heparin and lidocaine as single-drug treatments, or more commonly in combination "cocktails." Manual pelvic-floor physical therapy actually has the strongest evidence

Work-up and diagnosis of bladder pain syndrome

IC/BPS: An unpleasant sensation (pain, pressure, discomfort) perceived to be related to the urinary bladder, associated with lower urinary tract symptoms of more than six weeks duration, in the absence of infection or other identifiable causes

Basic Assessment

History
Frequency/volume chart
Post-void residual
Physical examination
Urinalysis, culture
Cytology if smoking history
Symptom questionnaire
Pain evaluation

Dx Urinary Tract
Infection

Treat &
Reassess

Signs/Symptoms of
Complicated IC/BPS

Incontinence/OAB
GI signs/symptoms
Microscopic/gross
hematuria/sterile pyuria
Gynecologic signs/symptoms

Consider

- Urine cytology
- Imaging
- Cytoscopy
- Urodynamics
- Laparoscopy
- Specialist referral (urologic or non-urologic as appropriate)

Fig. 1. Workup and diagnosis of bladder pain syndrome.

Management algorithm for bladder pain syndrome

First-Line Treatments

Patient education
Self-care, behavioural modification
General relaxation/stress management
Pain management

Second-Line Treatments

Appropriate manual physical therapy techniques
Oral: cimetidine, amitriptyline, hydroxyzine, pentosan polysulfate sodium
Intravesical: lidocaine, dimethyl sulfoxide, heparin
Pain management

Research Trials

Patient enrolment as appropriate at any point in treatment process

Clinical Management Principles

- Treatments are ordered from most to least conservative; surgical treatment is appropriate only after other treatment options have been found to be ineffective (except for treatment of Hunner's lesions if detected)
- Initial treatment level depends on symptom severity, clinician judgment and patient preferences
- Multiple simultaneous treatments may be considered if in best interests of patient
- Ineffective treatments should be stopped
- Pain management should be considered throughout course of therapy with goal of maximizing function and minimizing pain and side effects
- Diagnosis should be reconsidered if no improvement within clinically meaningful time frame

Third-Line Treatments

Cystoscopy under anesthesia with hydrodistention
Treatment of Hunner's lesions if found
Pain management

Fourth-Line Treatments

Neuromodulation
Pain management

Sixth-Line Treatments

Diversion with or without cystectomy
Substitution cystoplasty
Pain management
NOTE: For patients with end-stage structurally small bladders, diversion is indicated at any time clinician and patient believe appropriate

Fifth-Line Treatments

Cyclosporine A
Intradetrusor botox
Pain management

Fig. 2. Management algorithm for bladder pain syndrome.

for efficacy, although availability and cost can present barriers to patients. Should these fail to produce the desired effect, one can move on to more invasive interventions, such as cystoscopy with hydrodistention or sacral nerve stimulation. The use of cyclosporine or bladder injections of botulinum toxin may also be considered for select refractory patients. It should be noted that, apart from

physical therapy, none of these interventions have particularly solid evidence of efficacy; those reserved for later in the algorithm are more invasive or are associated with a higher burden of potential complications.

Conclusions

At this time, our understanding of BPS is incomplete and thus there is no one curative therapy. It is essential to identify the subset of patients with Hunner's lesions for whom local therapy is highly effective. Patients should also be reassured that BPS is not a progressive condition, and while it may take some time to discover the therapeutic option that works best for their individual situation, most patients can achieve significant relief with time and multimodal treatment.

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References

1. van de Merwe JP, Nordling J, Bouchelouche P, et al. Diagnostic criteria, classification, and nomenclature for painful bladder syndrome/interstitial cystitis: an ESSIC proposal. *Eur Urol* 2008;53(1):60-7. <http://dx.doi.org/10.1016/j.eururo.2007.09.019>
2. Hanno PM, Burks DA, Clemens JQ, et al. AUA guideline for the diagnosis and treatment of interstitial cystitis/bladder pain syndrome. *J Urol* 2011;185(6):2162-70. <http://dx.doi.org/10.1016/j.juro.2011.03.064>

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